

[METHOD FOR OPTIMIZING MATERIAL SUBSTITUTIONS WITHIN A SUPPLY CHAIN]

Abstract

Disclosed is a method and system for efficiently modeling the situation where a product manufactured within a multi-stage manufacturing system has components upstream in the supply chain which may substitute for one another. The invention selectively permits substitutions based on rules associated with downstream operations or customer shipments. One component may substitute for another provided that the assembly consuming the component belongs to a certain set of assemblies. The invention also encompasses a method by which this can be integrated into a production planning system based on a linear programming (LP) model.